

**Notes on Several Species of North American Pachy-
gasterinae (Diptera: Stratiomyidae) with the
Description of a New Species.***

By FRANK M. HULL, Dickinson, Texas.

The accumulation of material in this group of interesting little flies has led to the following notes upon them, together with the description of new species of *Neopachygaster*. All of these species referred to below belong to the group with "unspined scutellum". The habits of the subfamily are unusually interesting. In late spring and early summer they seem to manifest a predilection for windows. I have frequently collected them in laboratories, street cars in the heart of a city, railroad coaches, etc. They are more usually found about deep woods near rotten logs and at such places they may be swept up from the grass.

ZABRACHIA POLITA Coq. A male and a female. A. and M. College, Mississippi, April 8th, 1922 (E. W. Stafford), and May 12, 1920 (F. M. Hull). Taken on windows and by sweeping.

NEOPACHYGASTER MACULICORNIS Hine. A number of specimens of both sexes, from A. and M. College, Mississippi, May 19, 1920 (E. W. Stafford, F. M. Hull); Columbus, Ohio, May 30, 1923 (F. M. Hull). Taken on windows only. The male of this species has dichoptic eyes. The sexes are readily distinguished by the differently colored pile of the thorax; in the male silvery, in the female more golden yellow.

***Neopachygaster vitreus* n. sp.**

This species differs from *N. maculicornis*, the only other described North American species in the uniform shining black color and size. The argenteus scales of that species completely lacking.

♂. Length 2.3 mm. On account of the furcate third vein, subglobose third antennal joint, and antennae near the middle of the head in profile, this species goes in to the genus *Neopachygaster*. It shows numerous differences from *N. maculicornis* Hine.

*Contributions from the Plant Lice Laboratory, Texas Agric. Exper. Sta.

Head practically as in that species. Front shining, glossy black, the silvery lateral margins of the eyes extending a short distance above the antennae, and meeting along a median line, to form a hemispherical silvery spot at base of antennae. Proboscis yellow. Antennae pale yellow; third joint somewhat globose, slightly higher than long, conspicuously darkened on the inner side; arista yellowish, blackish on apical half. Head in profile about one-and-one-half times higher than long. Antennae situated at middle of head in profile, or slightly above.

Thorax black, extremely glossy, covered on the dorsum with sparse, appressed, very silky pile, longer and heavier on the sides behind the humeri, and towards the middle arranged to form three obscure, narrow, median stripes; whole posterior half of dorsum uniformly pilose. Halteres yellow, knobs white. Scutellum rather simple, evenly rounded, shining black with pile similar to that of thorax, placed at an angle of not quite forty-five degrees; rim slightly emarginate at apex; extreme margin with numerous small nodular protuberances, more prominent than in *maculicornis*.

Abdomen short and globose, shining, glossy black, with sparse, pale, appressed, silky pile. Legs pale yellowish; coxae and femora, except bases and apices, shining blackish. Wings hyaline; third vein furcate, veins yellowish.

This specimen will be seen to be somewhat intermediate between *Neopachygaster* and *Eupachygaster* because of the strong prominences on the scutellar rim. A careful examination of *maculicornis* will also reveal small prominences of a similar nature, hence this character is not of importance in separating the two. Otherwise the scutellum is practically of the same shape as *Neopachygaster*. In its small size and shining black color it resembles *Zabrachia polita*. However, the third vein is distinctly furcate.

Type, a male, Ames, IOWA, July 15, 1923 (F. M. Hull). In my own collection.

EUPACHYGASTER PUNCTIFER Malloch. Apparently the male has not been taken before, and I append a short description of its essential differences from the female.

♂.—Eyes not quite touching, very narrowly divided. Front and likewise ocellar space triangular. The silvery pilose lateral border of eyes extends entirely up to where the eyes approach nearest, not confluent, separated by a narrow, shining black line. Median frontal groove prominent; otherwise head very much as in female.

Thorax quite different from that of the female. There is a broad median stripe or band, of fairly long, thick, appressed, brilliant silvery scale-like hair or pile. On the sides and back of the humeri, this becomes small patches of shorter, silvery scales, or scale-like hair. Halteres dark brown, knobs white. Abdomen and legs practically as in the female.

Type and one paratype in my collection. A number of specimens from MISSISSIPPI A. and M. College on the following dates: May 19 and 20, 1922, and April 28, 1920 (F. M. Hull).

There will thus be seen a rather striking resemblance to the male of *Neopachygaster maculicornis*, in the wide silvery band of the thorax; however, the holoptic eyes and different scutellum readily separate the two.

EUPACHYGASTER HENSHAWI Malloch. I have a single specimen that I formerly held to be an undescribed form and which appears to belong here. The following notes are included for comparison.

♀.—Front shining black. The silvery lateral margins of the eyes do not extend as far above the antennae as in *punctifer*. A median band, of short recumbent, slightly yellowish pile, begins where they leave off, divides at the ocelli, and extends beyond them, the pilose area divided in its entire length by a slender groove. This is equivalent to the M-shaped mark described by Malloch in *punctifer*, and in my specimens of that species it does not extend past the ocelli. First and second joints of antennae yellow; third orange, not so dark on inner side as in *punctifer*, about one-and-one-half times broader than long, and longer below, on the inner side; pubescence of annuli silvery and with a bead-like appearance; arista reddish at base, brownish apically (white in *punctifer*), and very short pubescent and much slenderer than in *punctifer*. Face dark grayish, more or less opaque.

Thorax opaque black, obscurely punctate on the greater, median part of dorsum, and from which proceeds short appressed, sparse, silky pile, somewhat yellowish in color. The silver, scale-like hairs are confined to a narrow median line, and to five or six rather regular rows, on outer side of dorsum between the humeri and base of wing. Halteres yellow, knobs white. Scutellum with similar punctures and pile as in *punctifer*, but with the preapical hump or bulge, very much less prominent.

Abdomen glossy, vitreous black, with pale, sparse, short appressed pile, but with none of the silver, scale-like hairs as

found in *punctifer*. Legs pale yellow, coxae brownish, femora, all but bases and apices, shining black. Wings hyaline; third vein furcate.

One female, A. and M. College, MISSISSIPPI, April 29, 1922 (F. M. Hull).

JOHNSONOMYIA ALDRICHI Malloch. A number of specimens of both sexes from several localities. A. and M. College, MISSISSIPPI, April 13, 1922 (F. M. Hull). Ames, IOWA, June 20, 1923, and Columbus, OHIO, June 2, 1923 (F. M. Hull). Collected both on windows and by sweeping. The above specimens agree well with the description. However, in the latter, there is no mention of a fairly distinct striped arrangement of the pile of the thorax. In my specimens three median stripes are easily discernible.

PACHYGASTER PULCHER Lw. Several specimens, both sexes, loaned by Professor J. S. Hine, seem to be this species. They agree well with the description, although the latter seems deficient on one or two points. It does not mention a slight bluish reflection apparent in the material before me. Moreover, in this series, the abdomen, especially in the male, is somewhat more elongate than is common among other members of the group. The above mentioned specimens were from Atherton, MISSOURI, May 25, 1922 (C. F. Adams) and Madison WISCONSIN, June 3, 1919 (A. C. Burrill).

The Preservation of Lepidopterous Larvae by Injection.

By A. C. COLE, JR., Ohio State University, Columbus, Ohio.

I have found, in the preparation of Lepidopterous larvae for display purposes in dry mounts, that the use of the methods listed below gave approximately 100% insurance against their destruction by museum pests, and in most cases caused the larvae to retain their original shapes.

I. INJECTING WITH THE VISCERA INTACT.

Fill a hypodermic syringe with one of the fluids specified below, being sure to use the needle indicated under the fluid.